

### **REMARKS**

Claims 1-20 are all the claims pending in the application. Reconsideration and allowance of all the claims are respectfully requested in view of the following.

#### **Claim Rejections - 35 U.S.C. § 251**

The Examiner rejected claims 1-20 under §251 as allegedly being an improper recapture of broadened claimed subject matter surrendered in the application (US 08/763,721, hereinafter the '721 application) for the patent upon which the present reissue is based.

The recapture rule “prevents a patentee from regaining through reissue the subject matter that he surrendered in an effort to obtain allowance of the original claims.”<sup>1</sup> Application of the recapture rule is a three-step process.

1) determine whether and in what aspect the reissue claims are broader than the patent claims;

2) determine whether the broader aspects of the reissued claim related to surrendered subject matter<sup>2</sup>; and

3) determine whether the reissued claims were materially narrowed in other respects to avoid the recapture rule.<sup>3</sup>

In the present case, neither step 2 nor step 3 warrant application of the recapture rule.

In connection with step 2, a patentee is estopped from attempting to recapture the precise limitation he added or argued to overcome prior art rejections.<sup>4</sup> In this regard, the Examiner

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<sup>1</sup> *Pannu v. Storz Instruments Inc.*, 59 USPQ2d 1597 (Fed. Cir. 2001) (citing *In re Clement*, 131 F.3d 1464, 45 USPQ2d 1161 (Fed. Cir. 1997) )

<sup>2</sup> *Id.*

<sup>3</sup> *Id.*, see also *Hester Indus., Inc. v. Stein, Inc.*, 142 F.3d 1472, 46 USPQ2d 1641 (Fed. Cir. 1998).

<sup>4</sup> *Pannu*, 59 USPQ2d 1597, 1601.

asserts that the present claims recite “light” as opposed to a “laser beam”, and that “light” was surrendered during prior prosecution. Applicants respectfully traverse this determination because the Examiner’s interpretation of the prosecution in the ‘721 application is mistaken. Particularly, for at least the following two reasons, Applicants did not give up the broad concept of “light” in favor of the more narrow “laser”.

(i) The prior art cited and applied against the claims teaches the use of a “laser” and, therefore, this recitation could not distinguish the claims over the prior art rejections.

Specifically, US Patent 5,028,939 to Hornbeck et al. (hereinafter Hornbeck) teaches a spatial light modulator system, wherein the “[l]ight source L may be tungsten halogen (white light) ... or may be a laser diode in the infrared or near infrared band, or may be ...” Hornbeck at col. 9, lines 34-40.

Additionally, US Patent 5,337, 074 to Thornton (hereinafter Thornton) and US Patent 5,657,071 to Shinohara (hereinafter Shinohara) teach the use of lasers in a printer and an image processing apparatus, respectfully. Specifically, the Examiner in the ‘721 application cited Thornton as teaching that LEDs have an advantage of having a simpler structure than laser diodes, and cited Shinohara as teaching that a same modulation technique may be applied to spatial light and lasers. See Office Action mailed December 24, 1997 in the ‘721 application at the paragraph bridging pages 4-5, and at page 5, item 6, 3<sup>rd</sup> paragraph.

Lastly, US Patent US Patent 5,296,958 to Roddy et al. (hereinafter Roddy) discloses a multiple wavelength laser beam scanning system. See, for example, title and abstract.

(ii) In response to rejections based on Hornbeck, Roddy, Thornton, and Shinohara, Applicants did not argue that the recited “laser” distinguished the claims over the prior art.

Specifically, in the December 24 Office Action, the Examiner rejected the claims using various ones of Hornbeck, Thornton, and Shinohara. In response to the December 24 Office Action, Applicants arguments were directed to the arrangement of the R, G, and B, light sources; not to the inclusion of “laser”. See the amendment filed May 11, 1998 at pages 8-10.

In an Office Action mailed on May 28, 1998, the Examiner added Roddy to the bases for his rejections. Specifically, the Examiner asserted that Roddy taught the particular arrangement of the light sources. See the May 28 Office Action at page 3, last paragraph, page 4, 1<sup>st</sup> paragraph, and page 7, 1<sup>st</sup> full paragraph. In response to this Office Action, Applicants argued that the references failed to teach or suggest the structure of the “means for modulating the intensity of a laser beam”. But the thrust of the argument was not on “laser” versus “light source”; instead it was that the references failed to teach or suggest the particular arrangement of the means for modulating as including a micromirror array. See the Amendment filed October 28, 1998 at page 3, 2<sup>nd</sup> full paragraph, and page 4, 2<sup>nd</sup> full paragraph.

In an Office Action mailed December 22, 1998, the Examiner maintained his rejections based on Hornbeck, Roddy, Thornton, and Shinohara. In this Office Action, the Examiner specifically noted that **“the laser beam is not positively recited as part of the invention; the sources of light actually recited as part of the invention are each only broadly recited as ‘light source.’ ”** December 22 Office Action at page 6, 1<sup>st</sup> full paragraph, last 3 lines (emphasis added). In response to this Office Action, in a paper filed on March 16, 1999, Applicants again argued that the references fail to teach or suggest a specific structure of the means for modulating as including a micromirror array. Nowhere did Applicants argue that the recitation of “laser” distinguished the claims from the cited art.

In a Preliminary Amendment filed April 22, 1999, Applicants amended claim 1 to include further details of the micromirror array. Specifically, Applicants recited that “each of said micromirrors includes a first tilt state, a second tilt state and a horizontal state”. This same recitation was present in independent claim 12, whereas independent claim 7 set forth that the light sources also included a white light source.

In response to the April 22 Preliminary Amendment, the Examiner allowed the application on July 6, 1999 without further substantive comment.

As can be seen from the above, Applicants did not argue that the recitation of “laser” distinguished the claims from the prior art. Further, the Examiner did not even consider a “laser”

recitation as being a part of the claims, let alone that it distinguished the claimed invention from the prior art. Accordingly, Applicants have not surrendered the broader “light source” in favor of the more narrow “laser”.

For at least the above two reasons, during prosecution of the ‘721 application Applicants have not given up a claim scope that includes the broader term “light” as opposed to the more narrow term “laser”, because such a term was not added to, or argued as, distinguishing over the prior art cited against the claims.

For the purposes of step 3 in the recapture-rule determination, the comparison to be made is between the reissue claims and claims canceled from the original application; the comparison is not between the reissue claims and the claims in the issued patent. And if the reissue claim is narrower in an aspect germane to a prior art rejection, and broader in an aspect unrelated to the rejection, the recapture rule does not bar the claim.<sup>5</sup> In this case, the Examiner reaches the incorrect conclusion that the claims are not “materially narrower in other aspects”.

As an example, in comparing the reissue claims to claims canceled from the original application, the reissue claim 1 should be compared to the version of claim 1 as presented in the May 11 Amendment.

First, the reissue claim 1 is broader in one aspect. Specifically, it is seen that the reissue claim 1 recites a “means for modulating the intensity of a light”, whereas the May 11 claim 1 recited a “means for modulating the intensity of a laser beam”. However, as noted above, the recitation of “laser” was not germane to patentability of the claims. Instead, the recitation of “laser” was merely a mistake.

In Detailed Description of the Preferred Embodiments of the original specification and the patent publication, “light” is used, “laser beam” is not. There are recitations of “Red light from the red LED unit 11” at column 4, line 46 of the patent publication, “Green light from the

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<sup>5</sup> *In re Clement*, 45 USPQ2d 1161 (Fed. Cir. 1997) (relying on *Ball Corp. v. United States*, 729 F.2d 1429, 221 USPQ 289 (Fed. Cir. 1984) )

green LED unit 12” in lines 50-51, “Blue light from the blue LED unit 13” in lines 53-54. Further, it is cited that “Spot light of one frame reflected from the digital micromirror device 10 is projected by the projector lens onto photosensitive material such as color paper 30 to record an image of one frame” at column 5, lines 18-21. A detailed description of the micromirror is cited at column 3, line 31 to column 4, line 26 of the patent publication.

The “modulator means” cited in Claims 1 and 7, and the “modulator” cited in Claim 12 of the patent publication have micromirrors, hence they modulate the intensity of a light by changing the time of the valid reflection state of the micromirrors. The micromirrors are mirrors, so they do not have any function to change “light” into “laser beam”. Moreover, it is cited that “a red light source for striking said modulator means at a predetermined angle of incidence and illuminating said modulator means with red color light during the red exposure” in Claims 1 and 7. The modulator means is the micromirrors, therefore micromirrors reflect the red color light. Accordingly, it is impossible that the modulator means changes the red color light into a laser beam.

In the amendment filed on May 11, 1998 “laser beam” was added in Claim 1. In the Preliminary Amendment filed on April 22, 1999, “laser beam” was recited in newly added claims 7 and 12. However, according to the above mentioned portions of the specification, and the above reasons, these recitations of “laser beam” are merely errors.

Second, the reissue claim 1 is narrower than the May 11 claim 1 in an aspect that is germane to patentability of the claims. Specifically, reissue claim 1 sets forth that “each of the micromirrors includes a first tilt state, a second tilt state and a horizontal state”, whereas this recitation is completely missing from the May 11 claim 1. Further, as noted above, it is this recitation which lead to the allowance of claim 1.

Accordingly, because the claims are broader in an aspect unrelated to patentability, and are narrower in an aspect germane to patentability, the recapture rule does not apply.

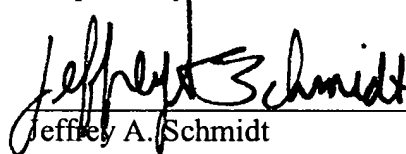
For at least any of the above reasons, the Examiner’s determination regarding recapture is improper and should be withdrawn.

**Conclusion**

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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